

What Is Claimed Is:

1. An Ag base alloy thin film comprising at least one element selected from the group consisting of Bi and Sb, the total content of Bi and Sb being 0.005 to 10 at%.

2. The Ag base alloy thin film according to claim 1, wherein the thickness of the Ag base alloy thin film is 3 to 300 nm.

3. The Ag base alloy thin film according to claim 1, further comprising at least one of rare earth metal elements.

4. The Ag base alloy thin film according to claim 3, wherein the rare earth metal element is at least one of Nd and Y.

5. The Ag base alloy thin film according to claim 1, comprising an Ag base alloy having a total content of Bi and Sb of 0.005 to 0.40 at%.

6. The Ag base alloy thin film according to claim 5, wherein the Ag base alloy further comprises at least one element selected from the group consisting of Nd and Y, and the total content of the elements of the group is 0.1 to 2 at%.

7. The Ag base alloy thin film according to claim 5, wherein the Ag base alloy further comprises at least one selected from the group consisting of Cu, Au, Rh, Pd, and Pt, and the total content of the elements of the group is 0.1 to 3 at%.

8. The Ag base alloy thin film according to claim 1, comprising an Ag base alloy having a total content of Bi and Sb of 0.01 to 10 at%.

9. The Ag base alloy thin film according to claim 8, wherein the Ag base alloy further comprises at least one element selected from the group consisting of Cu, Au, Pd, Rh, Ru, Ir, and Pt, and the total content of the elements of the group is 0.3 at% or more.

10. The Ag base alloy thin film according to claim 1, comprising an Ag base alloy having a total content of Bi and Sb of 0.01 to 4 at%.

11. The Ag base alloy thin film according to claim 10, wherein the Ag base alloy further comprises rare earth metal elements in an amount of 0.01 to 2 at%.

12. The Ag base alloy thin film according to claim 11, wherein the rare earth metal element is at least one of Nd and

Y.

13. A sputtering target for forming an Ag base alloy thin film, comprising at least one of Bi: 0.05 to 23 at% and Sb: 0.005 to 10 at%.

14. The sputtering target for forming an Ag base alloy thin film according to claim 13, comprising Bi in an amount of 0.05 to 4.5 at%.

15. The sputtering target for forming an Ag base alloy thin film according to claim 13, comprising Sb in an amount of 0.005 to 0.40 at%.

16. The sputtering target for forming an Ag base alloy thin film according to claim 13, wherein at least one of Bi: 0.2 to 23 at% and Sb: 0.01 to 10 at% is satisfied in terms of the content in the sputtering target, and the Bi content and the Sb content in the sputtering target satisfy the following formula (1):

$$0.01 \text{ at\%} \leq 0.000502x^3 + 0.00987x^2 + 0.0553x + y \leq 10 \text{ at\%}$$

... Formula (1)

where, in the formula (1), x denotes the Bi content (at%) in the Ag alloy sputtering target, and y denotes the Sb content (at%) in the Ag alloy sputtering target; and at% denotes atom %.

17. The sputtering target for forming an Ag base alloy thin film according to claim 16, further comprising at least one element selected from Cu, Au, Pd, Rh, Ru, Ir, and Pt in an amount of 0.3 at% or more.

18. The sputtering target for forming an Ag base alloy thin film according to claim 13, wherein at least one of Bi: 0.2 to 15 at% and Sb: 0.01 to 4 at% is satisfied in terms of the content in the sputtering target, and the Bi content and the Sb content in the sputtering target satisfy the following formula (2):

$$0.01 \text{ at\%} \leq 0.000502x^3 + 0.00987x^2 + 0.0553x + y \leq 4 \text{ at\%}$$

... Formula (2)

where, in the formula (2), x denotes the Bi content (at%) in the Ag alloy sputtering target, and y denotes the Sb content (at%) in the Ag alloy sputtering target; and at% denotes atom %.

19. An Ag base alloy reflective film or semi-transmissive reflective film for an optical information recording medium, comprising the Ag base alloy thin film according to claim 5.

20. An optical information recording medium comprising a reflective film made of the Ag base alloy thin film according to claim 5.

21. An optical information recording medium comprising

a semi-transmissive reflective film made of the Ag base alloy thin film according to claim 5.

22. An electromagnetic-shielding film comprising the Ag base alloy thin film according to claim 8.

23. The electromagnetic-shielding film according to claim 22, comprising a layer in which at least one content of Bi and Sb is higher than inside the Ag base alloy thin film on at least one of the surface and the interface of the Ag base alloy thin film.

24. The electromagnetic-shielding film according to claim 23, wherein the layer in which at least one content of Bi and Sb is higher contains at least one of oxidized Bi and oxidized Sb.

25. An electromagnetic-shielding film-formed product comprising: a substrate; and the Ag base alloy thin film according to claim 8 formed on the substrate.

26. The electromagnetic-shielding film-formed product according to claim 25, wherein a film containing at least one selected from the group consisting of oxide, nitride, and oxynitride is formed as an underlayer on the substrate, the Ag base alloy thin film is formed on the underlayer, and a film

containing at least one selected from the group consisting of oxide, nitride, and oxynitride is formed as a protective layer on the Ag base alloy thin film.

27. The electromagnetic-shielding film-formed product according to claim 26, wherein the underlayer and the protective layer are oxides or oxynitrides.

28. The electromagnetic-shielding film-formed product according to claim 26, wherein the oxide is at least one selected from the group consisting of ITO, zinc oxide, tin oxide, and indium oxide.

29. The electromagnetic-shielding film-formed product according to claim 26, wherein the thicknesses of the underlayer and the protective layer are 10 nm or more and 1000 nm or less.

30. The electromagnetic-shielding film-formed product according to claim 26, wherein the substrate is a transparent substrate.

31. The electromagnetic-shielding film-formed product according to claim 26, wherein a transparent member is further stacked on the protective layer.

32. The electromagnetic-shielding film-formed product

according to claim 26, wherein a transparent member is stacked on the protective layer via a spacer, and a space layer is disposed between the protective layer and the transparent member.

33. The electromagnetic-shielding film-formed product according to claim 26, wherein the thickness of the Ag base alloy thin film is 3 nm or more and 20 nm or less.

34. An optical reflective film for use as a reflection electrode or a reflector of a liquid crystal display device, the optical reflective film comprising the Ag base alloy thin film according to claim 10.

35. A liquid crystal display device comprising an optical reflective film made of the Ag base alloy thin film according to claim 10.